



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER OF PATENTS AND TRADEMARKS  
Washington, D.C. 20231  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/810,639	03/16/2001	Sumio Kawano	KNI-147-A	7389

21828 7590 01/29/2003

CARRIER BLACKMAN AND ASSOCIATES  
24101 NOVI ROAD  
SUITE 100  
NOVI, MI 48375

EXAMINER

VALENTIN, JUAN D

ART UNIT PAPER NUMBER

2877

DATE MAILED: 01/29/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/810,639

Applicant(s)

KAWANO, SUMIO

Examiner

Juan D Valentin II

Art Unit

2877

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5. 6) ☐ Other: \_\_\_\_\_

Art Unit: 2877

### DETAILED ACTION

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

1. Claim 3 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The specification discloses the use of “relational equations (regression equations) which can be candidates for the calibration equation...such as MLR, PCR and PLS” (pg. 7, lines 10-12). This reads that either one of the three-regression equations can be used interchangeably. It is the position of the Office that claim 3 is indefinite the way it reads, “wherein the calibration equation is determined using...MLR,...PCR and...PLS”. The way claim 3 reads all three-regression techniques are incorporated together and must all be in a reference in order for a rejection to be made. Claim 3 will be examined in light of the applicants specification, where at least one of the three-regression equations are needed.

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Art Unit: 2877

2. Claims 1-7 and 9-13 rejected under 35 U.S.C. 102(b) as being fully anticipated by Soller et al. (USPN '119, hereinafter Soller).

**Claim 1**

Soller discloses an analytical method of analyzing blood using near infrared spectroscopy comprising the steps of applying light through a blood collection receptacle to a sample of the blood contained in the receptacle (col. 2, lines 8-12). It is the position of the examiner that in order to apply light through a blood sample in vitro, the blood sample must be in some form of receptacle/container. Soller further discloses detecting at least one of diffusely reflected light and diffusely transmitted light from the blood sample in the blood collection receptacle by an optical sensor to measure a near infrared absorption spectrum of the blood sample (col. 2, lines 31-44). Soller further discloses modifying the measured spectrum using a calibration equation which has been determined in advance from a spectrum measured using the steps above relative to blood specimen with known object characteristics, thereby determining an object characteristic of the blood sample (col. 10, lines 18-38).

**Claim 2**

Soller further discloses an analytical method wherein the wavelength of near infrared light applied to the blood in the blood collection receptacle is 700nm - 1100nm (col. 11, lines 51-55).

**Claim 3**

Soller further discloses an analytical method of analyzing blood wherein the calibration equation is determined using a chemometrics technique multiple linear regression (MLR), principal component regression (PCR) and PLS regression (col. 8, lines 33-38).

Art Unit: 2877

**Claim 4**

Soller discloses a analytical apparatus for analyzing blood comprising a block provided with a housing portion for a translucent blood collection receptacle (col. 20, line 6). A near infrared apparatus provided with a spectroscope for dispersing near infrared light from a light source or from a sample of blood contained in the blood collection receptacle and an optical sensor for detecting the near infrared light (col. 19, lines 34-44). A light conduction means for conducting the near infrared light emitted from the light source or the spectroscope to the blood collection receptacle within the housing portion and for conducting, directly or through the spectroscope, at least one of diffusely reflected light and diffusely transmitted light from the blood sample within the blood collection receptacle to the optical sensor (col. 19, lines 34-44). A control means for outputting a measured spectrum of the blood sample to the near infrared apparatus and for modifying the measured spectrum using a calibration equation that has been determined in advance, for thereby computing an object characteristic of the blood sample (col. 19 and 20, lines 42-44 and 10-17).

**Claim 5**

Soller discloses an analytical apparatus for analyzing blood wherein a white light source (col. 19, lines 40-41) is used as the light source, and a diode array (col. 19, line 43) is used as the optical sensor. It is inherent that a tungsten lamp is a white light source, therefore it is the position of the Office that the reference of Soller reads upon the applicants claimed limitations.

**Claim 6**

It is the inherent and well known in the art to use silicon detectors with monochromatic light during spectroscopy analysis. It is the position of the Office that even though Soller does

Art Unit: 2877

not disclose the use of monochromatic light source in conjunction with a silicon detector directly, it is inherent in the art of spectroscopic analysis of a sample to use a silicon detector or equivalent when undertaking spectroscopic analysis of a sample with a monochromatic light source. In light of the applicants disclosure, there is no critically distinguishing light source or detector feature in the applicants disclosure that exemplifies novelty over prior art disclosure. Therefore, applicant will be appreciated that the reference of Soller reads on applicants claimed limitation.

**Claim 7**

Soller discloses an analytical apparatus for analyzing blood wherein the light conduction means comprises an optical fiber (col. 12, lines 59-62).

**Claim 9**

Soller discloses an analytical apparatus for analyzing blood wherein the calibration equation is determined in advance using the near infrared apparatus in relation to a plurality of blood specimens with different, known object characteristics (col. 10, lines 18-38).

**Claim 10**

Soller discloses an analytical apparatus for analyzing blood wherein the blood collection receptacle is a tube or bag (col. 6, lines 8-10).

**Claim 11**

Soller discloses an analytical apparatus for analyzing blood wherein the light conduction means comprises an optical fiber bundle (col. 12, lines 59-62).

Art Unit: 2877

**Claim 12**

Soller further discloses an analytical method of analyzing blood wherein the chemometrics technique involves at least one of multiple linear regression (MLR), principal component regression (PCR) and PLS regression (col. 8, lines 33-38).

**Claim 13**

Soller discloses an analytical apparatus for analyzing blood wherein the blood collection receptacle is a tube or bag (col. 6, lines 8-10).

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 8 rejected under 35 U.S.C. 103(a) as being unpatentable over Soller in view of Chaiken et al. (USPN '686 B1, hereinafter Chaiken).

**Claim 8**

Soller substantially teaches the claimed invention except that it fails to show a block provided with a temperature control means for stabilizing the blood sample within the blood collection receptacle at a predetermined temperature. Chaiken shows that it is known to provide a temperature regulator (col. 6, lines 19-21) for a noninvasive spectroscopy apparatus. It would have been obvious to someone of ordinary skill in the art to combine the device of Soller with

Art Unit: 2877

the temperature regulator of Chaiken for the purposes of providing a means for altering the temperature of a sample being analyzed.

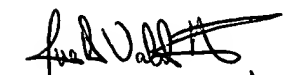
### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Juan D Valentin II whose telephone number is (703) 605-4226.

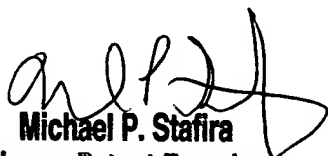
The examiner can normally be reached on M-Th., Every other Fr..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frank Font can be reached on (703) 308-4881. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9318 for regular communications and (703) 872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308- 0955.

  
Juan D. Valentin II  
Examiner 2877

JDV  
January 22, 2003

  
Michael P. Stafira  
Primary Patent Examiner  
Technology Center 2800